Specifications for CMP5010-B – Graphics I – Coursework

Interactive 2D Computer game

Spring Term 2016

I. **Essential** features of the game:

1. The game will be a roaming game with a certain type of vehicle, animal (e.g. predator), humanoid, etc. controlled by the player.
2. The area should not be homogenous which means certain parts are difficult or impossible to roam or penetrate, e.g. mountain range, minefield, lake, barricade, etc.
3. One or more targets need to be reached or a number of collectibles have to be collected to move to the next level (or finish the game). A clear scoring system is essential (e.g. time spent after collecting all collectibles is not sufficient).
4. Enemy or ‘prey’ vehicles/characters are an essential component.
5. The main player’s character/vehicle needs to correctly collide (collision detection) with all objects in the scene (including NPC’s).

II. **Additional marks** (weighted from 1-4; 4 being the highest) are awarded for:

1. Sound (1)
2. Collision Detection between NPC’s and objects (2-3)
3. AI for enemy characters (2-4)
4. Collision response (which goes beyond simply bouncing back) (2-3)
5. Articulated characters or vehicles using IK (4)
6. More than one level but with clear distinction between levels (e.g. just adding more enemies does not qualify). (2-3)
7. A level editor to create new levels using scripting or a GUI. (3-4)
8. Animated textures/sprites (1-3)
9. More complex collision detection, e.g. GJK algorithm, bounding box hierarchies. (3-4)
10. Follower characters/vehicles which follow the main characters/vehicles. (3)
11. Interactive information for game player. (2-3)
12. Anything else you can come up with (but not as specified in Section IV).

III. **Marks are deducted** for:

1. Unstable execution (e.g. game freezes or exits unexpectedly).
2. Incorrect blending of textured polygons or sprites.
3. Incorrect scrolling when vehicle/character reaches edge of viewport.
4. No clear objective and scoring system
5. Incorrect collision detection (objects do not collide at all or interpenetrate).
6. Cluttered or overly complex game which is not playable by an ‘average’ player.
7. Poorly implemented additional features as outlined in section II.

IV. **No marks are added** for:

* 1. Multi-player games
  2. Alternative controllers (Xbox, PS4, etc.)

**Guidelines for marks**:

<40 A game which has not added anything to example programming code which was provided prior to the start of the coursework exercise and/or the majority of essential features as outlined in Section I are missing and/or the game has substantial flaws as outlined in Section III.

40-50 A game which has additional implementation as compared to example code but one or more of the essential features are not present (Section I) or there a number of flaws as outlined in Section III.

50-60 Additional implementation as compared to example code but with minor shortcomings (either some essential features are missing – Section I – or there are flaws as outlined in Section III) which result in a non-fully functional game.

60-70 A functional game with all essential features (Section I) present and no flaws (Section III) but with low weighted features as outlined in Section II.

70-85 A fully functional game with all essential features, no flaws and a good number of extra (higher weighted) features as outlined in Section II.

85+ A stellar game with all essential features, no flaws and a substantial number of additional (high weighted) features as outlined in Section II and a clear display of creativity in the technical and game design/gameplay sense.

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Version 2

Game

* Boats
* Shoot other boats
* Edge is land
* Stop if hit land
* Enemies shoot you
* Health bar
* Crew number
* Can heal if certain amount of crew
* Heal has cooldown
* Speed depends on crew levels
* Enemy ships drop crew
* 0 crew you die
* Enemy killed count
* Max crew
* Animated water
* Enemies path towards you if you come in range
* Side cannons
* Enemies run if low health
* Shallow water slows you down
* Cannons cooldown